REMARKS

Claims 1, 2, 4, 9, 11, 15, 19-21 and 23 are pending in this application, with claims 1, 9, 15 and 20 being independent.

Independent claims 9, 15 and 20, along with their dependent claims 11, 19, 21 and 23, have been rejected as being unpatentable over Kim (U.S. Patent No. 5,846,877) in view of Tu (U.S. Patent No. 5,308,794) and Applicant Admitted Prior Art (AAPA). Applicants respectfully traverse this rejection.

Claims 9 and 15 each recite a semiconductor device having at least one thin film transistor over a substrate, the transistor including a conductive film (claim 9) or a wiring electrode (claim 15) that "contains germanium at a concentration from 20 to 40 atomic%." Claim 20 recites a semiconductor device that includes a wiring that "contains germanium at a concentration from 20 to 40 atomic%." Applicants request reconsideration and withdrawal of the rejection of claims 9, 15 and 20, and their dependent claims, because neither Kim, Tu, AAPA, nor any combination of the three describes or suggests the recited conductive film, wiring electrode, or wiring containing germanium at a concentration from 20 to 40 atomic%.

As noticed by the Examiner on pages 2 and 3 of the Office Action, neither Kim nor AAPA describes or suggests the recited conductive film, wiring electrode, or wiring containing germanium at a concentration from 20 to 40 atomic %. The Examiner refers to Tu as disclosing this feature.

Tu describes a method and apparatus for forming an interconnect through an opening or on an insulation layer that reduces the thermal stress between the interconnect and the insulation layer. While Tu shows a phase diagram in Fig. 2 that displays the phases that result at different temperatures as a concentration of germanium in aluminum is varied from 0 to 100 atomic percent, Tu provides no reason to believe that a conductive film, wiring electrode, or wiring having a concentration of 20 to 40 atomic percent germanium is useful. On the contrary, Tu teaches away from such a concentration range by using the phase diagram of Fig. 2 to teach that an aluminum interconnect in which *2.8 or less atomic percent* of germanium is dissolved at 424C is useful because, at that concentration and temperature, an aluminum-germanium solid may be formed which desirably precipitates germanium as it is cooled. Col. 3, lines 48-50; col. 5, lines 14-40. This precipitation increases the volume of the aluminum-germanium interconnect and

helps reduce the thermal stress between the interconnect and the insulation layer. Abstract. In contrast, as stated in the application in embodiment 7 on page 26, applicants specifically teach that a concentration of 20 to 40 atomic percent germanium offers the potential benefit of enabling a reflow process to occur at a lower temperature. Tu, on the other hand, does not provide any indication that varying the germanium concentration is useful to lower reflow temperatures, much less varying the germanium concentration from 20 to 40 atomic percent. Accordingly, Tu neither describes nor suggests the recited conductive film, wiring electrode, or wiring having a concentration of 20 to 40 atomic percent germanium.

For at least these reasons, applicants request reconsideration and withdrawal of the rejection of claims 9, 15 and 20 and their dependent claims 11, 19, 21 and 23.

Independent claim 1 and its dependent claims 2 and 4 have been rejected as being unpatentable over Kim in view of Tu, AAPA, and Yamaha (U.S. Patent No. 5,641,993). Applicants respectfully traverse this rejection. Claim 1 recites a semiconductor device having at least one thin film transistor over a substrate, the transistor including a wiring that "contains germanium at a concentration from 20 to 40 atomic%." For at least the above reasons, neither Kim, Tu, AAPA, nor any combination of the three describes or suggests a wiring having a concentration of 20 to 40 atomic percent germanium. Yamaha does not remedy the deficiency of Kim, Tu, and AAPA to disclose this feature. Accordingly, applicants request reconsideration and withdrawal of the rejection of claim 1 and its dependent claims 2 and 4.

Applicants submit that all claims are in condition for allowance.

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Respectfully submitted,

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